

133. The microcontroller of Claim 132 wherein the security protocol requires that a particular identity must be validated to permit loading a derivative program onto a card.
134. The microcontroller of Claim 132 further comprising a decryption key wherein the security protocol requires that a derivative program to be loaded is encrypted using a loading key corresponding to the decryption key.
135. The microcontroller of Claim 127 wherein the microcontroller is configured to provide cryptographic services selected from the set including encryption, decryption, signing, signature verification, mutual authentication, transport keys, and session keys.
136. The microcontroller of Claim 127 further comprising a file system and wherein the microcontroller is configured to provide secure access to the file system through a means selected from the set including:
- (a) the microcontroller having access control lists for authorizing reading from a file, writing to a file, or deletion of a file,
 - (b) the microcontroller enforcing key validation to establish the authorized access to a file, and
 - (c) the microcontroller verifying card holder identity to establish the authorized access to a file.--

REMARKS

This Amendment is intended to be a complete response to the Office Action of October 4, 1999, and the case is believed to be in condition for allowance. Accordingly, reconsideration is respectfully requested.

Changes to Specification:

A number of minor typographical errors have been discovered upon review of the Specification. The above amendment to the Specification corrects those errors. No new matter has been added.

Correction to Drawing:

Enclosed is a replacement sheet for sheet 4 of the drawings. Elements 46, 47, 48, and 49 were previously numbered incorrectly. However, the discussion of these elements on Page 1 of the English language of the Specification makes it clear that the intended numbering should be as on the replacement drawing sheet.

Also enclosed are replacement sheets for Figures 16 and 18 with corrections in red. In both instances the arrow leading into element 166 incorrectly originated with element 165 rather than element 164. Again, the proper flow through the algorithm is evident from the Specification.

Status of the Claims

Claims 1-105 are pending in the Application. Claims 1-105 were rejected in the Office Action. Claims 1, 6, 31, 36, 58, 91, 93, 95, 103, 104, and 105 are amended herein. Claims 106 through 136 are added herein. Claims 59 through 90 are cancelled herein without prejudice.

The Claims

35 USC 102 and 35 USC 103

Claims 1-28, 31-97, and 100-105 were rejected under 35 USC 102(e) as being anticipated by Peyret et al. (U.S. Patent Number 5,923,884, hereafter "Peyret") and Claims 29, 30, 97, and 98 were rejected under 35 USC 103(a) as being unpatentable over Peyret et al. (U.S. Patent Number 5,923,884) as applied to claims 1 and 59, and further in view of Martineau (U.S. Patent No. 5,915,226). Applicants traverse these rejections.

It is well-established law that a reference does not anticipate a claimed invention unless each element of the claim is taught by the reference. *See e.g.*, *General Electric Co. v. Nintendo Co.* (CA FC) 50 USPQ2d 1910 ("A judgment of invalidity for anticipation requires that a single prior art reference disclose every limitation in a patent claim"); *PPG Indus., Inc. v. Guardian Indus. Corp.*, 75 F.3d 1558, 1566, 37 USPQ2d 1618, 1624 (Fed. Cir. 1996) ("To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter.").

Claim 1 is amended herein to more clearly claim the subject matter of the invention. As amended, Claim 1 recites, for example, "a memory storing: an application derived from a program written in a high level programming language format, and an interpreter operable to interpret such an application derived from a program written in a high level programming language format". Peyret does not teach either of those elements.

In the Office Action, which of course was directed to Claim 1 prior to the amendments herein, the Examiner indicated that Peyret teaches a memory storing an application having a high level programming language format. In doing so, the Examiner pointed to Peyret's disclosure in fig. 1 and in the abstract of the use of applets, erroneously inferring that Peyret was referring to the Java programming language. *Applets* does not imply Java. *See for example*, U.S. Patent No. 5,548,745, to Egan et al., filed January 19, 1993:

Window application products such as Microsoft Excel for Windows® are known as a software application for performing and processing tasks by jumping between user selected application programs (hereinafter "applet"). Each applet is an independent function, such as an input function or an output function, and collectively the applets permit the operator to perform a specific task.

There are at least two types of applets: a container-type applet or an editor-type applet. Container applets represent containers in which data or other containers are to be held. For example, a container applet such as a "file cabinet" is a type of container ordinarily at the top of the hierarchy of containers. A file cabinet contains folders, messages, and data objects, each of which is also a container. A container applet could also be a folder, which may be a general folder or a mailbox folder. A container applet may also be a message wherein the message may be a facsimile message, phone message, modem message or an E-mail message. All of the above folders and messages may be contained in the file cabinet container.

Applicants request that the Examiner take official notice that Window application products such as Microsoft Excel did not interpret Java in January 1993. Thus, there is no implication that Peyret was disclosing Java or any other high level language.

Furthermore, there is a difference between an *applet* and an *application*. The word *applet* merely means small application. Usually an *applet* is a program designed to run in a specific environment, in the case of a Java applet, inside a Java-enabled web browser or, as discussed above in the quote from U.S. Patent No. 5,548,745, in the Excel program.

Therefore, Peyret does not anticipate Claim 1.

Furthermore, Claim 1 is not obvious over Peyret. As noted above, Peyret does not suggest, "a memory storing: an application derived from a program written in a high level programming language format, and an interpreter operable to interpret such an application derived from a program written in a high level programming language format" (Claim 1). Applicants do not agree with the inference that "applet" implies the use of a high level language. However, even if that inference is drawn, for the sake of argument, Claim 1 is nevertheless not obvious from Peyret.

It is well-established law that to render a claim obvious, a prior art reference must provide an enabling disclosure. *Rockwell Int'l v United States*, 47 USPQ2d 1027, 1032 (CAFC 1998), *Motorola, Inc. v. Interdigital Technology Corp.* 43 USPQ2d 1481, 1489 (CAFC 1997), *Beckman Instruments, Inc. v. LKB Produkter AB*, 13 USPQ2d 1301, 1304 (CAFC 1989). Peyret is completely silent on how to enable a program written in a high level language to operate on an integrated circuit card. Thus, Claim 1 is not obvious over Peyret.

To put Java (or any other high level language) on an integrated circuit card is anything but obvious. At the time of the invention, the typical Java Virtual Machine required over 1 MB of memory. Any person of ordinary skill would realize that to squeeze such an interpreter into an integrated circuit card (such as a smart card) is anything but an obvious task. Applicants direct the Examiner to the following statement made about the author of a recent JAVA WORLD article (<http://www.javaworld.com/javaworld/jw-04-1998/jw-04-ringfever.html>):

“About the author: Chuck McManis wrote the very first Crypto toolkit in Java when he was a member of the Java development group in 1993. **He also brought in the first smart cards (Hitachi) at FirstPerson but gave up trying to put Java on them.** (Now he knows better!) Today he writes columns and articles for JavaWorld and is currently holding the position of director of systems software at FreeGate Corporation in Sunnyvale.”

Applicants submit that Chuck McManis is well beyond a person of ordinary skill in the art of Java programming. In fact, he is a leading expert in the field of software design and holds at least four patents for his work. The fact that he “gave up trying to put Java on [smart cards]” is indicative of the non-obviousness of doing so.

Applicants also invite the Examiner to consider the following excerpt including a quote from Scott McNealy (CEO of Sun Microsystems, the company that originally developed the Java language):

"Like Playing Golf in a Phone Booth"

A smart card enabled by Java Card technology, dubbed the "world's thinnest computer," places the Java platform inside the .8 millimeter thickness of the plastic card, thus making it a small but integral part of a larger enterprise information system.

Its creation was no small feat. "Fitting Java technology inside smart cards was like playing golf inside a telephone booth," remarks Sun CEO Scott McNealy.

<http://softwarema.usec.sun.com/features/1999/01/javacard.html>

JAVA CARDTM TECHNOLOGY GROWS UP SMART

by Janice J. Heiss and John Papageorge

When two *experts* in the field of the Java programming language consider putting Java on smart cards very difficult, for a person of *ordinary* skill it would certainly be unattainable. Peyret's disclosure, which neither mentions nor suggests high level languages nor how to put such language interpreters on a smart card, would be of no help to the ordinarily skilled person.

For all these reasons, Claim 1 is neither anticipated by, nor obvious over Peyret and should be allowed.

The Examiner rejected Claims 29, 30, 97 and 98 under 35 USC 103(a) as unpatentable over Peyret in view of U.S. Patent No. 5,914,226 to Martineau (hereinafter Martineau). The Examiner relied on Martineau for a teaching of providing communications to a remote location. Martineau does not teach or suggest "a memory storing: an application derived from a program written in a high level programming language format, and an interpreter operable to interpret such an application derived from a program written in a high level programming language format" (Claim 1). Therefore, Claim 1 is patentable over Martineau, whether taken singly or in combination with Peyret and should be allowed.

The argument above with respect to Claim 1 is applicable to all other independent claims in the application. For the reasons given above in support of Claim 1, all the independent claims are patentable over Peyret and Martineau taken singly or in combination. Accordingly, the independent claims should all be allowed.

The dependent claims all depend from an allowable independent base claim, incorporate all the limitations of their respective base claims, and provide further unique combinations. Therefore, each dependent claim is patentable for the reasons given above in support of Claim 1 as applied to such independent base claim and by virtue of such further unique combinations. Accordingly, applicants request reconsideration of the dependent claims and their allowance.

CONCLUSION

It is submitted that all the claims now in the application are allowable. Applicants respectfully request reconsideration of the application and claims and its early allowance. If the Examiner believes that the prosecution of the application would be facilitated by a telephonic interview, Applicants invite the Examiner to contact the undersigned at the number given below.

It is believed that no additional fees, other than the fee for the Petition for Extension of Time, are due in connection with this Response as has been indicated on the transmittal letter. If Applicant is in error as to these fees, the Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account 19-0597.

Respectfully Submitted,



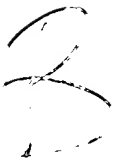
Pehr B. Jansson
Registration No. 35,759

Date: Feb 3, 2000

Enclosures:

1. Acknowledgment Postcard
2. Transmittal Form (1 sheet)
3. Amendment Transmittal Letter (1 sheet)
4. Petition for Extension of Time (1 sheet) & duplicate copy
5. Submission of Drawing Amendment Form (1 sheet)
6. Figs. 4, 16, & 18 with corrections marked in red ink (3 sheets)

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A handwritten mark or signature, possibly a stylized 'S' or a similar character, located in the bottom right corner of the page.

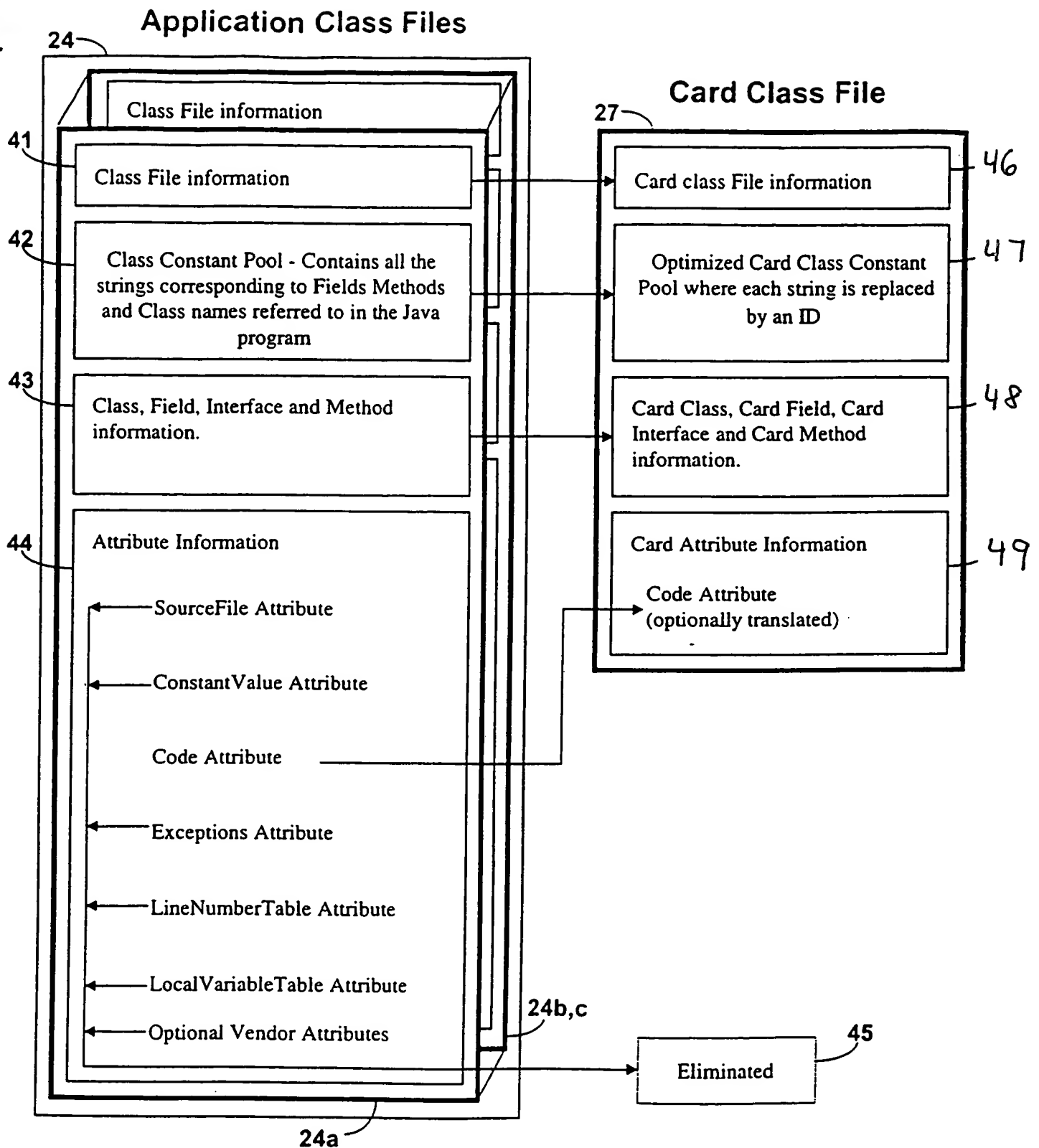


Fig. 4

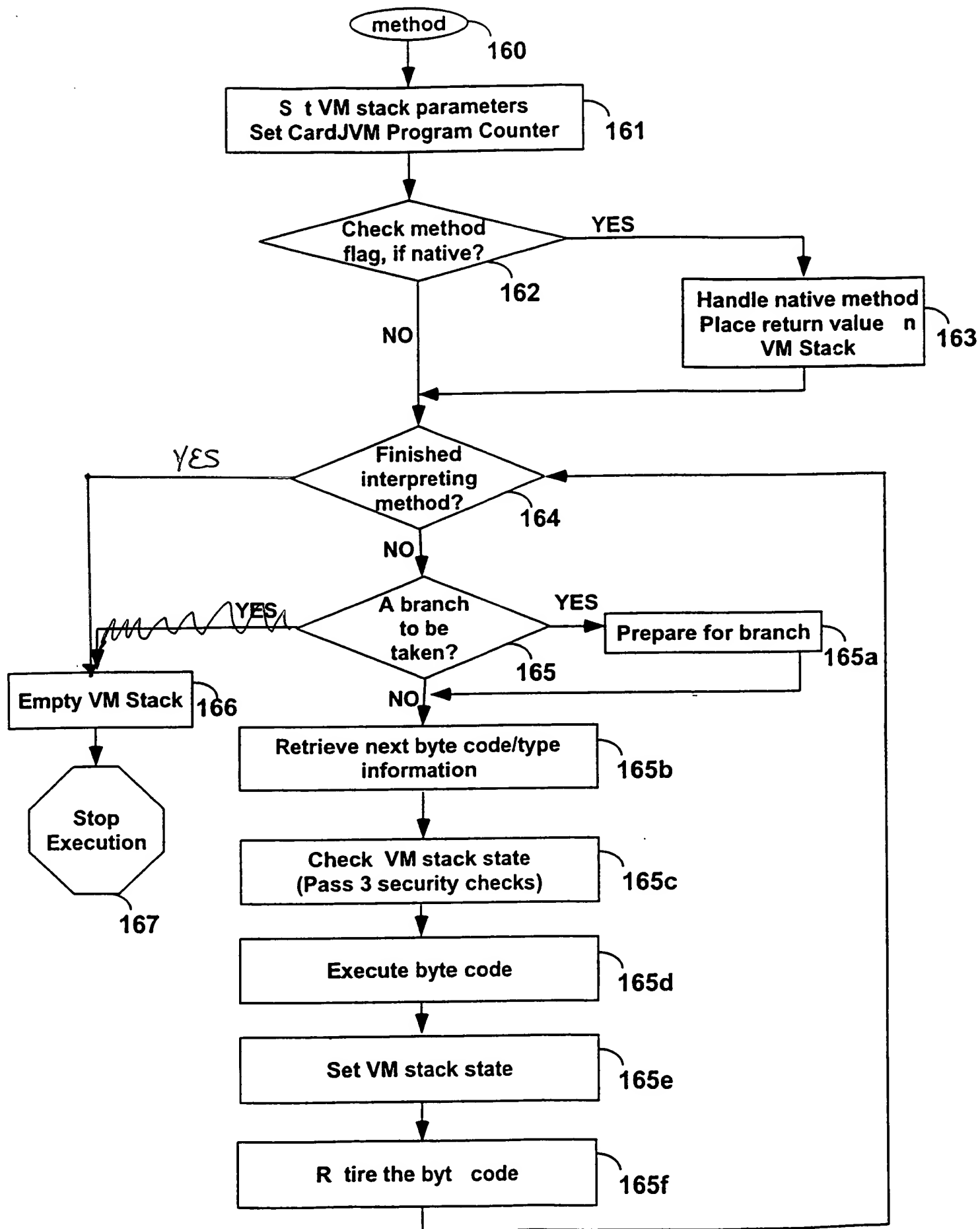


Fig. 16

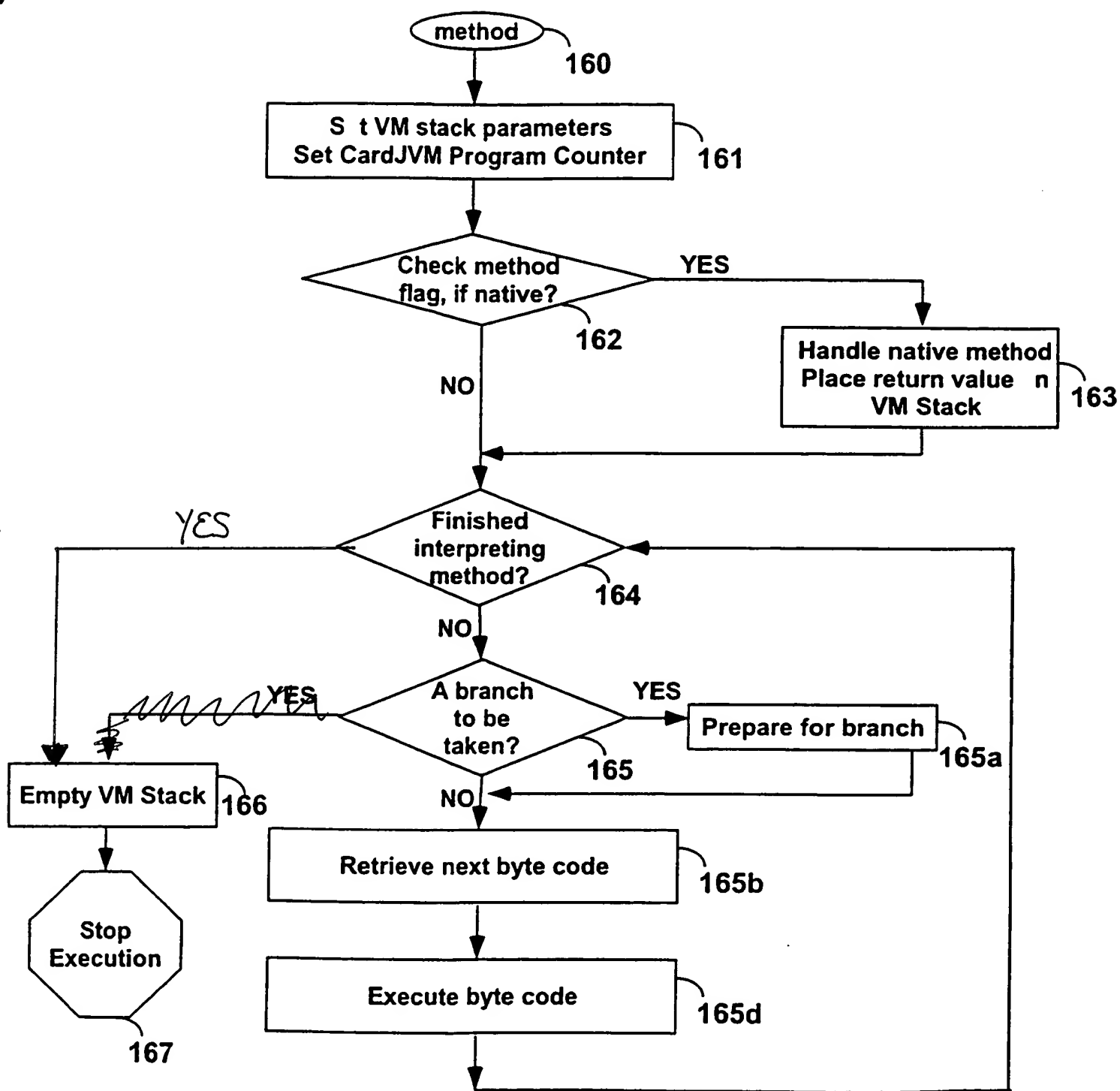


Fig. 18